

filtrates. Almost all lymphomas are monoclonal populations, the progeny of a single transformed progenitor cell. Reactive infiltrates, in contrast, are polyclonal. The clonality of a lymphoid cell population can be determined by analyzing the structure of genes that code for immunoglobulins in B cells or for the antigen receptor molecules of T cells. These genes undergo precise rearrangements during lymphocyte development, assuming a different structure in each clone of lymphoid cells. By evaluating the type and number of such rearrangements in DNA extracted from a clinical biopsy specimen, the presence of any predominant B- or T-lymphocyte clone can be readily detected. When present, such clonal proliferation implies malignancy. Clonal populations constituting as few as 5% of the infiltrating cells can be shown by this method. Several researchers have shown that the pattern of gene rearrangements present in a lymphocyte population also gives evidence of its lineage (T versus B cell) and degree of differentiation.

Because cutaneous lymphoid infiltrates represent a notoriously difficult diagnostic problem, we applied this technique to a broad spectrum of such lesions. Skin biopsy specimens of mycosis fungoides, a cutaneous T-cell lymphoma, were found to contain a monoclonal T-cell infiltrate, as did the peripheral blood of patients with Sézary's syndrome, a form of chronic T-cell leukemia. Clonal T-cell proliferation has also been identified in several rare conditions whose relationship to T-cell lymphoma is controversial, such as lymphomatoid papulosis and granulomatous slack skin. This technique also permitted reliable distinction between the polyclonal lesions of cutaneous pseudolymphoma and the monoclonal infiltrates of cutaneous B-cell lymphoma. The analysis of gene rearrangements can therefore provide both scientific insights and an objective diagnostic aid in the evaluation of lymphoid cell infiltrates of the skin.

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Hodgkin's Disease—Controversies 1986

THE CELL OF ORIGIN in Hodgkin's disease remains a mystery, but recent data from a number of laboratories shed additional light on the subject. The issue is of more than academic interest because it also involves the question of the role of markers in the diagnosis of Hodgkin's disease. The morphologic diagnosis of Hodgkin's disease is relatively noncontroversial, but there is a surprising error rate in diagnosing Hodgkin's disease. A recent study found an error rate of 13%. This figure would appear to be unacceptable given the current level of therapeutic success with this disease.

The antibody Leu M1, originally defined as a myelomonocytic marker, has been increasingly utilized as a marker of Hodgkin's disease following a number of recent reports of its presence in Reed-Sternberg cells and their variants. Two major questions have arisen over these data. Weak or absent

staining in cases of lymphocyte-predominant Hodgkin's disease has led some authors to conclude that this disorder is unrelated to the other forms of Hodgkin's disease. But recently Hsu and co-workers have suggested that the cells are simply more mature and as a consequence have sialylated the antigen. Using neuraminidase treatment, they removed the terminal sialic acid residues and found the antibody Leu M1 was present in most cases of lymphocyte-predominant Hodgkin's disease. The second major question concerns the specificity of the reaction. The original reports found little evidence of staining for the antibody in non-Hodgkin's lymphomas, but a recent study shows that many of the peripheral T-cell lymphomas most likely to be confused with Hodgkin's disease did stain for it.

The second question above is of practical significance. Grouping the results from all of the articles in question suggests that at least a portion of peripheral T-cell lesions contain the antibody. For those with access to frozen section or plastic section immunophenotyping, the application of standard B & T reagents can generally resolve the differential. With only paraffin blocks available, there are still some markers that will help resolve the question of peripheral T-cell lymphoma versus Hodgkin's disease. These include a number of markers commonly seen in Hodgkin's disease, but seen infrequently in T-cell lymphomas, such as HLA-DR/1a, cathepsin B, lysozyme, α_1 -antitrypsin, peanut agglutinin and concanavalin A.

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Monitoring Cervical Carcinoma With Fine-Needle Aspiration Biopsy

DESPITE MAJOR ADVANCES in diagnosis and treatment, cervical carcinoma continues to be a disease of major epidemiologic importance, with an estimated 16,000 new cases each year and an annual mortality of 7,000. Rational surgical or radiotherapeutic treatment of invasive cervical carcinoma depends on accurate initial staging and subsequent surveillance for occult persistent and recurrent disease. Most recurrences occur early and in areas palpable by pelvic examination. If disease has not spread beyond the central pelvis, pelvic exenteration can offer long-term survival, even in women with recurrent cervical carcinoma. Follow-up of patients with cervical cancer traditionally has been by physical examination, exfoliative cytology and radiologic examinations. Recently some have advocated adding fine-needle aspiration biopsy (FNAB) to the list of procedures that may be effective in detecting persistent or recurrent disease in patients with cervical cancer.

The principal advantages of FNAB over open surgical biopsy for following patients with cervical cancer are rapid reporting of results, minimal morbidity and complications and good patient tolerance. In women with cervical carci-